

REMARKS

Claims 2-9, 17 and 18 are pending in the present application. Claims 1 and 10-16 have been cancelled. Claims 3, 4 and 5 are independent claims. The Examiner is respectfully requested to reconsider his rejections in view of the Amendments and Remarks as set forth hereinbelow.

Drawings

On March 31, 2003, Applicant filed a Drawing Correction Authorization Request. To date, however, the Examiner has not approved of the proposed drawing corrections. Accordingly, it is respectfully requested that the Examiner provide an indication of approval in the next communication so that the drawing changes may be implemented into formal drawings and promptly filed in the U. S. Patent and Trademark Office.

Claim Rejection; Furino

Claims 2 and 3 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,452,452 to Furino, Jr. (hereafter Furino). Applicant respectfully traverses this rejection.

The Office Action states that Furino discloses the claimed invention and admits that Furino fails to teach the claimed impedance of the negative feedback being dependent upon a signal voltage occurring across the negative feedback circuit. Instead, the Office Action alleges that it would have been obvious to have changed the component value of the feedback circuit (50,60) of Furino to obtain a desired change of the impedance and likewise increasing the input signal of Furino would have resulted in the increase of the feedback impedance.

The Office Action relies on Furino's Fig. 3 and alleges that Furino discloses a power amplifier 30 and a negative feedback circuit comprising a diode 50 and a capacitor 60 connected in series.

Furino discloses in Fig. 3 an NPN transistor amplifier 30 and a negative feedback path through an electronically controllable conductance between the collector 33 and the base 31 of the amplifier 30. The electronically controlled conductance of Furino comprises the diode 50 which has its forward conductance varied by adjusting a current flow through a controllable current source 40. (see Furino's Fig. 3).

In the present invention, on the other hand, impedance of the negative feedback circuit depends on a signal voltage occurring across the negative feedback circuit, and the negative

feedback circuit is a series connection circuit consisting essentially of a diode and a capacitance device connected in series, wherein the diode has a variable impedance characteristic.

For example, in the present invention, an input power signal, P_{in} , fed to the signal input terminal of the power amplifier is amplified by the power amplification circuit and sent out as an output power signal, P_{out} . The gain of the power amplifier depends on the input power signal, P_{in} . An impedance device exhibits an increasing impedance Z_1 with an increasing input power signal P_{in} . Thus, the impedance device has a variable characteristic that can suppress any gain decreases in the amplification circuit.

Furino is merely concerned with the variable conductance property of its circuit, which is the reciprocal of electrical resistance (impedance). Thus, Furino fails to teach or suggest having an impedance of the negative feedback circuit being dependent upon a signal voltage occurring across the negative feedback circuit.

Furthermore, Furino fails to specifically teach that amplifier 30 is a power amplifier with an input power signal terminal and an output power signal terminal. Furino merely

refers to a signal to be amplified. (se Furino, col. 3, lines 7-15).

In addition, the Office Action fails to provide any proper motivation for modifying Furino to arrive at the claimed invention. For example, the Office Action states that it would have been obvious to change the component value of the feedback circuit to obtain a desired change of the impedance of the feedback. (see Office Action, page 2).

However, to establish a *prima facie* case of Obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

The Office Action fails to provide a proper suggestion or motivation in Furino itself that would lead one to make the above-noted modification. Instead, the Office Action is merely

using improper hindsight reconstruction based on Applicant's disclosure to arrive at the claimed invention.

Accordingly, for the above reasons, Applicant respectfully requests that the rejection be withdrawn.

Claim Rejection; Carney

Claims 2, 3, 5-9 and 18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,098,199 to Carney et al. (hereafter Carney). Applicant respectfully traverses this rejection.

The Office Action admits that Carney fails to disclose the impedance of the negative feedback depends on a signal voltage occurring across the negative feedback circuit. (see Office Action, page 2).

Carney discloses a video amplifier circuit incorporating a bipolar gain control feature. Specifically, in Carney, a transistor 10 is utilized as the amplifying element and a varying amount of negative feedback, resulting in a gain control feature, is provided by a pair of series-connected, oppositely-poled diodes 22 and 23 which are coupled by a pair of capacitors 24 and 25. (see Carney's Fig. 1). In Carney, when the input signal increases, a negative D.C. gain control voltage related to an average magnitude of the output signals will appear. This

will establish a given forward bias level for the diodes 22 and 23.

Thus, it can be seen that, Carney fails to disclose that the diode has a variable impedance characteristic. Therefore, Carney fails to teach or suggest the claimed feature that "the diode has a variable impedance characteristic."

Furthermore, the Office Action uses the exact same obviousness-type argument as for Furino to try to show why the claimed invention is obvious over Carney. As noted above, the Office Action has failed to provide a proper motivation for why one would modify Carney to arrive at the claimed invention and is merely using improper hindsight reconstruction reasoning.

Accordingly, for the above reasons, Applicant respectfully requests that the rejection be withdrawn.

Claim Rejection; Kahn

Claims 4 and 17 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,023,952 to Kahn (hereafter Kahn). Applicant respectfully traverses this rejection.

The Office Action directs Applicant's attention to Fig. 7 of Kahn. However, Applicant submits that Fig. 7 of Kahn fails to

teach or suggest a power signal input terminal and a diode having a variable impedance characteristic.

Kahn discloses a photodiode 10, a resistor 30, and a capacitor 15 being connected in series between the inverting input and the output of the amplifier 13. (see Kahn's Fig. 7). The negative feedback circuit in Fig. 7 of Khan is connected between an -5 volt voltage supply via a forward biased diode 20 and an output signal voltage V_o . As such, Kahn merely discloses a voltage amplification and fails to disclose a power amplification. Thus, Kahn fails to disclose in Fig. 7 a negative feedback circuit connected between a power signal input terminal and a power signal output terminal.

Furthermore, as admitted in the Office Action, Kahn fails to disclose that the impedance of the negative feedback circuit being dependent upon a signal voltage occurring across the negative feedback circuit. In the present invention, since the diode has a variable impedance characteristic, (see at least page 32, paragraph [0055] of the present specification), to the signal voltage thereacross, the impedance of the negative feedback circuit depends on the signal voltage occurring across the negative feedback circuit. Kahn fails to teach such a feature.

Finally, as alleged with Carney and Furino, the Office Action again states that it would have been obvious to change the component values of the feedback circuit to arrive at the claimed invention. (see page 3 of Office Action). As noted above, this is improper hindsight reconstruction.

Accordingly, for the above reasons, Applicant respectfully requests that the rejection be withdrawn.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.


Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert W. Downs (Reg. No. 48,222), at the telephone number of (703) 205-8000, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to the provisions of 37 CFR 1.17 and 1.136(a), Applicant respectfully petitions for a one (1) month extension of time for filing a response in connection with the present application. The required fee of \$110.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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